

EXHIBITA

**APPLERA CORPORATION ET AL. v. THERMO ELECTRON CORP.
CIVIL ACTION NO. 04-1230-GMS (D. DEL.)**

and

**THERMO FINNIGAN LLC v. APPLERA CORPORATION ET AL.
CIVIL ACTION NOS. 05-110-GMS (D. DEL.)**

JOINT CLAIM CONSTRUCTION CHART

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
comprising	1, 14	including, but not limited to.		Agreed.	
vacuum chamber	1, 14	a chamber maintained at less than atmospheric pressure.		Agreed.	
first vacuum chamber	1, 14	a vacuum chamber.		Agreed.	
second vacuum chamber	1, 14	a vacuum chamber coming after, in the path of ion travel, the first vacuum chamber.		Agreed.	
first and second vacuum chambers separated by a wall . . . an interchamber orifice located in said wall [claim 1]	1, 14	“Separated by a wall” means “at least a wall between the first and second vacuum chambers”	’736 patent, claim 1(a); claim 14; Fig. 1, ref. 36, Fig. 12, ref. 36’, and discussion thereof; col. 4, ll. 24-26. AB/Sciex’s construction was adopted by the Court in <i>Applera Corp. v. Micromass UK Ltd.</i> , 186 F.	“First and second vacuum chambers separated by a wall” means that a wall defines a common boundary of each of the first and second vacuum chambers. ’736 patent: 3:21-23, 3:49-53, 4:24-26, 4:38-42, 6:19-20, 7:10-52, 8:49-59, 10:30-66, 14:10-23, fig. 1, figs. 12-13. Original prosecution history: Notice of Allowability, 5/8/1990, p. 2.	

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
first and second spaces ... separated by an interchamber orifice [claim 14]		“interchamber orifice” means “an orifice in a wall between the first and second vacuum chambers”	Supp. 2d 487, 510, 529 (D. Del. 2002), <i>aff’d</i> , 2003 WL 1795593 (Fed. Cir. 2003). ’736 patent, col. 2, ll. 40- 49; col. 4, ll. 38-42; Fig. 1, ref. 34, Fig. 12, ref. 34’, and discussion thereof; col. 4, ll. 24-26 . AB/Sciex’s construction was adopted by the Court in <i>Applera</i> , 186 F. Supp. 2d at 510, 529.	“First and second spaces ... separated by an interchamber orifice” means that an opening is located at a common boundary of each of the first and second spaces.	Reexamination history: Patent Owner’s Request for Reexamination, 9/30/1997, pp. 24, 35. Office Action in Reexamination, 2/3/1998, p. 2. ’736 patent: 3:21-23, 3:49-53, 4:24-26, 4:38-42, 6:19-20, 7:10-52, 8:49-59, 10:30-66, 14:10- 23, fig. 1, figs. 12-13. Original prosecution history: Notice of Allowability, 5/8/1990, p. 2. Reexamination history: Patent Owner’s Request for Reexamination, 9/30/1997, pp. 24, 35. Office Action in Reexamination, 2/3/1998, p. 2.
inlet orifice	1, 14	an orifice that provides an inlet into the first vacuum chamber for the passage of		Agreed.	

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIE X		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
		ions and neutral gas molecules.			
<u>means for</u> <u>generating ions</u> <u>of a trace</u> <u>substance to be</u> <u>analyzed</u>	1	1a. This is a 35 U.S.C. § 112, ¶ 6 element. 1b. The function is “generating ions of a trace substance to be analyzed.” 1c. The corresponding structure, material, or acts described in the specification is an electric discharge needle, electropray source or other ionization source operating at approximately atmospheric pressure. 2. “trace substance”: no construction needed. ¹	’736 patent, col. 4, ll. 7-16; Fig. 1, ref. 18, Fig. 12, ref. 18’, and discussion thereof.	1a. Agreed. 1b. Agreed. 1c. The corresponding structure is an electric discharge needle, electropray source, or other ionization source operating at approximately atmospheric pressure that is not after-developed technology. 2. “Trace substance” means matter that is present in a small amount or as a small fraction of a sample.	1. ’736 patent: 3:21-23, 3:49-51, 4:7-16, fig. 1, fig. 12. 2. ’736 patent: 1:15-18, 4:7-13.
<u>means ... for</u> <u>directing said</u> <u>ions through said</u> <u>inlet orifice into</u> <u>said first vacuum</u>	1	“Means ... for directing said ions through said inlet orifice into said first vacuum chamber” is a 35 U.S.C. § 112, ¶ 6 element.		Agreed.	

¹ “Trace substance” also appears in claim 14. The parties agree that whatever construction is adopted for “trace substance” for claim 1 should also apply for claim 14.

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
chamber		<p>The function of is “directing said ions through said inlet orifice into said vacuum chamber.”</p> <p>The corresponding structure, material, or acts described in the specification is either, or both, of two independent operating parameters: (1) the application of appropriate DC potential between the inlet orifice and the rod set in the first vacuum chamber; and/or (2) a difference in the pressures on either side of the inlet orifice.</p>	<p>’736 patent, col. 4, ll. 38-42; col. 9, ll. 18-33; col. 4, ll. 17-21; col. 8, ll. 60-68; col. 9, ll. 3-4, 13-17; col. 9, ll. 34-41; col. 10, ll. 3-24; col. 11, ll. 7-12; col. 12, ll. 30-35; Fig. 1, refs. 24, 30, 31, 42, and discussion thereof.</p> <p>AB/Sciex’s corresponding structure, material, or acts was adopted by the Court in <i>Applera</i>, 186 F. Supp. 2d at 518, 530.</p>	<p>Agreed.</p> <p>The corresponding structures include “curtain gas plate 22,” “orifice plate 28,” and “rod set 32.”</p>	<p>’736 patent: 3:21-23, 3:49-51, 4:17-23, 4:38-41, 9:22-33, fig. 1, fig. 12.</p>
rod set	1, 14	<p>“rod set” means two or more rods.</p>	<p>’736 patent, claim 1(c); col. 2, ll. 40-45; col. 4, ll. 21-23, 27-28; Fig. 1, refs. 32, 40; Fig. 12, refs. 32’, 40’, and discussion thereof.</p>	<p>“rod set” means a number of rods of the same kind that belong or are used together. This is in accordance with the meaning of “set” which means a number of things of the same kind that belong or are used together.</p>	<p>’736 patent: abstract, 1:8-13, 3:21-23, 3:49-53, 4:21-23, 4:27-28, 6:21-22, 9:13-14, 9:29-32, 12:38, 13:9-24, fig. 1, figs. 12-13.</p>
rod		<p>“Rod” means “an electrode having a length along an ion path that produces an</p>	<p>’736 patent, col. 4, ll. 51-65. <i>See also</i> ’420 patent, col. 1, ll. 36-37; col. 1, ll.</p>	<p>“rod” means a “slender bar” that is, in accordance with the meaning of</p>	<p>Original prosecution history: Notice of Allowability, 5/8/1990, p. 2.</p>

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
second rod set	1, 14	a rod set coming after, in the path of ion travel, the first rod set.	47-50; col. 6, ll. 43-46, 60-62; col. 8, ll. 12-51; Fig. 1, ref. 14-2, Fig. 4, Fig. 5, Fig. 7, Fig. 8, Fig. 9, Fig. 12, and discussion thereof.	“slender,” narrow in circumference in proportion to its length, and substantially longer than it is wide.	Reexamination history: Patent Owner’s Request for Reexamination, 9/30/1997, pp. 7-8.
extending along at least a substantial portion of the length of said first vacuum chamber	1	“Substantial portion” means “a portion that is significant for purposes of avoiding scattering and losses of ions within the chamber.”	’736 patent, col. 14, ll. 4-9.	“Extending along at least a substantial portion of the length of said first vacuum chamber” means having a length extending at least most of the length of the first vacuum chamber.	’736 patent: 3:21-23, 3:49-51, 10:30-34, 14:4-10, fig. 1, fig. 12. Reexamination history: Patent Owner’s Request for Reexamination, 9/30/1997, p. 7.
each rod set comprising a plurality of elongated parallel rod means spaced laterally apart a short distance from each other to define an elongated space therebetween extending longitudinally	1	1. “elongated” means having a length that exceeds its width. 2. “parallel rod means” means rods that extend in the same direction and everywhere equidistant. 3. “rod means” means “rods” and therefore requires no construction separate from the	1. ’736 patent, col. 13, ll. 3-31. 2. ’736 patent, Fig. 1, refs. 32, 40, Fig. 12, refs. 32’, 40’, and discussion thereof; <i>see also</i> citation for “rod means” below. 3. <i>See</i> citation above for “rod.”	1. “elongated” means “stretched out” and having a form notably long in comparison to its width.” 2. “Parallel rod means” means rod means that extend in the same direction and everywhere equidistant. 3a. “rod means” is a means-plus-function limitation subject to 35 U.S.C. § 112, ¶ 6.	1. ’736 patent: 3:21-23, 3:49-53, 6:19-22, 9:13-14, 13:9-20, 13:23-24, 14:4-10, fig. 1, figs. 12-13. 3. ’736 patent: abstract; 3:21-23; 3:49-53, 4:21-23, 4:27-28; 6:19-22; 9:13-14; 12:38, 13:9-20,

U.S. PATENT 4,963,736 Claim Element <u>through such rod</u> <u>set</u>	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
		construction of "rods."		3b. The function is to define an elongated space therebetween. 3c. The corresponding structures are four 15-cm quadrupole mass spectrometer rods that are not too short as described in the specification.	13:23-24, 14:4-10, fig. 1, figs. 12-13.
		4. "spaced laterally apart a short distance" requires no construction.	4. '736 patent, col. 4, ll. 43-50.	4. "spaced laterally apart a short distance" means that the rod means are separated by a distance substantially less than the length of each elongated rod.	4. '736 patent: 3:21-23, 3:49-53, 6:19-22, 9:13-14, 13:9-20, 13:23-24, 14:4-10, fig. 1, figs. 12-13.
		5. "space . . . extending longitudinally" means space that runs lengthwise down the rods.	5. '736 patent, col. 2, ll. 40-46; col. 13, ll. 3-31; Fig. 1, refs. 32, 40, Fig. 12 refs. 32', 40', and discussion thereof.	5. "space . . . extending longitudinally" means space that runs lengthwise down the rods, and that is longer than it is wide.	5. '736 patent: 3:21-23, 3:49-53, 6:19-22, 9:13-14, 13:9-20, 13:23-24, 14:4-10, fig. 1, figs. 12-13.
		1. "rod means" means "rods" and therefore requires no construction separate from the construction of "rods."	See citation above for "rod."	1. "rod means" in claim 14 has the same meaning as "rod means" in claim 1.	1. '736 patent: abstract, 3:21-23; 3:49-53, 4:21-23, 4:27-28; 6:19-22; 9:13-14; 12:38, 13:9-20, 13:23-24, 14:4-10, fig. 1, figs. 12-13.
said first and second rod sets each comprising a <u>plurality of rod means and defining</u>	14				

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
longitudinally extending <u>first</u> and <u>second</u> <u>spaces</u>		2. "longitudinally extending . . . spaces" means space that runs lengthwise down the rods.	See citation above for "space . . . extending longitudinally."	2. "longitudinally extending . . . spaces" means space that runs lengthwise down the rods, and that is longer than it is wide.	2. '736 patent: 3:21-23, 3:49-53, 6:19-22, 9:13-14, 13:9-20, 13:23-24, 14:4-10, fig. 1, figs. 12-13.
first space	1, 14	a space.		Agreed.	
second space	1, 14	a space coming after, in the path of ion travel, the first space.		Agreed.	
located end to end	1, 14	the rod sets and spaces must be arranged in a manner that ions may be successfully transmitted from the end of the first rod set or the first space to the end of the second rod set of second space.	'736 patent, claim 1(c); claim 14; <i>see also</i> claims 25, 26. AB/Sciex's construction was adopted by the Court in <i>Applera</i> , 186 F. Supp. 2d at 514, 529.	No construction necessary in light of construction of "aligned."	
aligned	1	being in or coming into precise adjustment or correct relative position.		Agreed.	
means for applying essentially an AC-only voltage between the rod means of said first rod set so that the first rod	1	1a. This is a 35 U.S.C. § 112, ¶ 6 element. 1b. The function is applying essentially an AC- only voltage between the rods of said first rod set so that said first rod set may guide ions through said first	1. '736 patent, col. 1, ll. 20-28 ; col. 4, ll. 43-46; Fig. 1, ref. 32, Fig. 12, ref. 32', and discussion thereof. <i>See also</i> '420 patent, col. 5,	1. Agreed. 1b. The function is applying essentially an AC- only voltage between the rod <u>means</u> of said first rod set so that the first rod set may guide ions through	1. '736 patent: 3:21-23, 3:49-53, 4:43-46, fig. 1, figs. 12-13.

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
set may guide ions through said first space [claim 1]		space. 1c. The corresponding structure, material, or acts is described in the specification are the rods of rod set 32 and, as is well known to those skilled in the art, an AC power supply connected to the rods.	1. 59 – col. 6, l. 32; Fig. 6 and discussion thereof.	said first space. 1c. Although the specification discloses rods between which AC voltage is applied, the specification does not disclose any structure for applying essentially an AC-only voltage between the rod means. Hence, the specification does not disclose the corresponding structure required for construction of this limitation under § 112, ¶ 6. This limitation and claim 1 are therefore indefinite.	2. '736 patent: 12:64 to 13:2. Original prosecution history: Notice of Allowability, 5/8/1990, p. 2. Reexamination history: Patent Owner's Request for Reexamination, 9/30/1997, pp. 13, 21, 26, 37. Interview Summary for
		2. "Essentially an AC- only" allows for some DC component.	2. '736 patent, col. 4, ll. 38-46; col. 9, ll. 18-33; col. 11, ll. 7-12; col. 11, ll. 20- 33; col. 12, l. 30 – col. 13, l. 2.	2. "Essentially an AC-only voltage between the rod means" means a voltage between the rod means that is essentially AC-only RF voltage and that lacks any placed DC component that would cause the rod set to act as a mass filter."	

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
		3. "Guide ions through" means "ions are guided through the first space."		3. Agreed.	3/11/1998 interview, p. 1. Office Action in Reexamination, 6/15/1998, pp. 2-3. Notice of Intent to Issue Reexamination Certificate, 6/12/1999, p. 2.
placing an essentially an AC-only RF voltage between the rod means [claim 14]	14	"Essentially an AC-only" allows for some DC component.	See citation above for "essentially an AC-only."	"Placing an essentially AC-only RF voltage between the rod means" means placing an RF voltage between the rod means that is an essentially AC-only RF voltage and that lacks any placed DC component that would cause the rod set to act as a mass filter.	'736 patent: 12:64 to 13:2. Original prosecution history: Notice of Allowability, 5/8/1990, p. 2. Reexamination history: Patent Owner's Request for Reexamination, 9/30/1997, pp. 13, 21, 26, 37. Interview Summary for 3/11/1998 interview, p. 1. Office Action in Reexamination, 6/15/1998, pp. 2-3. Notice of Intent to Issue Reexamination Certificate,

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIE X		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
means for applying both AC and DC voltages between the rod means of said second rod set so that said second rod set may act as a mass filter for said ions	1	<p>This is a 35 U.S.C. § 112, ¶ 6 element.</p> <p>The function is applying both AC and DC voltages between the rods of the second rod set so that said second rod set may act as a mass filter for said ions.</p> <p>The corresponding structure, material, or acts is described in the specification are the rods of rod set 40 and, as is well known to those skilled in the art, AC and DC power supplies connected to the rods.</p>	<p>'736 patent, col. 4, ll. 46-50; Fig. 1, ref. 40, Fig. 12, ref. 40', and discussion thereof.</p> <p><i>See also</i> '420 patent, col. 5, l. 59 – col. 6, l. 32; Fig. 6 and discussion thereof.</p>	<p>Agreed.</p> <p>The function is applying both AC and DC voltages between the rod means of said second rod set so that said second rod set may act as a mass filter for said ions.</p> <p>Although the specification discloses rods between which AC and DC voltages are applied, the specification does not disclose any structure for applying both AC and DC voltages between the rod means. Hence, the specification does not disclose the corresponding structure required for construction of this limitation under § 112, ¶ 6. This limitation and claim 1 are therefore indefinite.</p>	<p>6/12/1999, p. 2.</p> <p>'736 patent: 3:21-23, 3:49-53, 4:46-50, fig. 1, fig. 12.</p>
mass filter	1, 14	a device that passes through ions of one or more mass to charge ratios while filtering out ions of all other mass to charge ratios.	'736 patent, col. 1, ll. 10-12; col. 4., ll. 46-50.	a device that passes through ions of one or more select mass-to-charge ratios while filtering out ions of all other mass-to-charge ratios,	'736 patent: abstract, 1:10-13, 4:27-28, 4:46-50, 12:66-68.

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIECX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
				and which does not function as an ion trap.	Reexamination history: Patent Owner's Request for Reexamination, 9/30/1997, pp. 6-11.
means for flowing gas through said inlet orifice into said first space	1	This is a 35 U.S.C. § 112, ¶ 6 element. The function of "means for flowing gas" is "to flow gas through said inlet orifice and into said first space." The corresponding structure, material, or acts described in the specification is the existence of gas in a chamber, separated from the first vacuum chamber by the inlet orifice, at a higher pressure than that in the first vacuum chamber.	'736 patent, col. 4, ll. 17-21 ; col. 8, ll. 60-68; col. 9, ll. 3-4, 13-17, col. 9, ll. 34-41; Fig. 1, refs. 24, 30, 31, 42, and discussion thereof. AB/Sciex's corresponding structure, material, or acts was adopted by the Court in <i>Applera</i> , 186 F. Supp. 2d at 520, 530.	Agreed. Agreed. The corresponding structures include "curtain gas source 42," "duct 44 to the curtain gas chamber 24," "curtain gas chamber 24," "orifice plate 28," "orifice 26," "vacuum pump 31," and "vacuum chamber 30."	'736 patent: 3:21-23, 3:49-51, 4:19-41, fig. 1, fig. 12. Reexamination history: Patent Owner's Request for Reexamination, 9/30/1997, pp. 27, 38.
the pressure in said second chamber being a <u>very low pressure</u> for operation of said second rod set as a mass filter	1	"A very low pressure for operation of said second rod set as a mass filter" means a pressure at which the second rod set will operate as a mass filter.	'736 patent, Abstract ; claim 1(i); claim 14(g); col. 4, ll. 53-56; col. 13, l. 65 – col. 14, l. 3. AB/Sciex's position was accepted by the Court in <i>Applera</i> , 186 F. Supp. 2d at 520.	The pressure in the second chamber is at least below 1×10^{-5} torr.	Reexamination history: Patent Owner's Request for Reexamination, 9/30/1997, pp. 11-12.

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
a <u>substantially lower pressure</u> than that of said first chamber, for effective mass filter operation of said second rod set	14	"A substantially lower pressure than that of said first chamber, for effective mass filter operation of said second rod set" means a pressure that is sufficiently lower than that of the first chamber such that the second rod set will operate as a mass filter.	See citation above for "a very low pressure for operation of said second rod set as a mass filter."	The pressure in the second chamber is at least below 1×10^{-5} torr.	Reexamination history: Patent Owner's Request for Reexamination, 9/30/1997, pp. 11-12.
the length of said first rod set	1, 14	No construction necessary.		the length of the rods in the direction of the longitudinal axis.	'736 patent: 3:21-23, 3:49-53, 6:19-22, 9:13-14, 13:3-31, fig. 1, figs. 12-13. Reexamination history: Patent Owner's Request for Reexamination, 9/30/1997, pp. 29-32, 39, 41-43.
equal to or greater than 2.25×10^{-2} torr cm	1, 14	the product of the pressure in the first vacuum chamber and the length of the rods in the first rod set must be equal to or greater than 2.25×10^{-2} torr cm.		Agreed.	
means for maintaining the kinetic energies of ions moving from said inlet	1	1a. This is a 35 U.S.C. § 112, ¶ 6 element. 1b. The function is "maintaining the kinetic energy of ions moving from		1a. Agreed. 1b. Agreed.	

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
orifice to said first rod set at a relatively low level		said inlet orifice to said first rod set at a relatively low level.”	'736 patent, claim 8; claim 9; claim 10; col. 7, l. 67 – col. 8, l. 41; col. 12, ll. 30-56. AB/Sciex's corresponding structure, material, or acts was adopted by the Court in <i>Appлера</i> , 186 F. Supp. 2d at 523, 530.	1c. The corresponding structures include “curtain gas plate 22,” “orifice plate 28,” and “rod set 32.”	'736 patent: abstract, 3:21-23, 3:49-53, 4:16-40, 6:5-7, 6:47-49, 6:57-59, 12:30-63, fig. 1, figs. 12-13.
		1c. The corresponding structure, material, or acts described in the specification is the application of two variables: (1) a DC potential voltage between the inlet orifice and the first rod set, and (2) the pressure in the first vacuum chamber.		2. Agreed.	
		2. “Kinetic energy of ions” means “energy associated with the motion of ions.”		3. Agreed.	
improved transmission of ions through said interchamber orifice	1, 14	increased transmission of ions through the interchamber orifice over that which would occur absent either a product of pressure in the first chamber times length of the	'736 patent, col. 11, ll. 7-12; col. 5, ll. 41-50; col. 8, ll. 49-59; col. 12, ll. 30-56; Request for Reexamination of 9/30/1997, at 13.	Transmission of [said] ions that is better than that which would occur at a pressure-times-length value for the first chamber and first rod set below 2.25 x 10 ⁻² torr cm.	'736 patent: 1:42-51, 3:24-43, 5:40-46, 6:11-61, 7:10-63, 9:42-64, 10:3-28, 11:6-12, 11:39-40, 12:3-6, 13:32-55, figs. 2-8.

U.S. PATENT 4,963,736 Claim Element	Claims at Issue	AB/SCIEX		THERMO	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
		first rod set being equal to or greater than 2.25×10^{-2} torr cm, or the kinetic energies of ions entering the first rod set being maintained at a relatively low value.			Reexamination history: Patent Owner's Request for Reexamination, 9/30/1997, pp. 7, 13-14, 16-18, 22. Declaration Under 37 C.F.R. § 1.132 of Dr. J. Barry French, 4/1/1998, p. 4, ¶ 8. Amendment Under 37 C.F.R. § 1.530 to Non-Final Office Action, 4/30/1998, p. 7.
directing said ions through an inlet orifice in an inlet wall into said first space, first through said first space, said interchamber orifice and then through said second space, and then detecting the ions which have passed through said second space, to analyze said substance	14	ions traveling on the recited path through an inlet wall, the first space, interchamber orifice, and second space must be detected to analyze the substance.		Agreed.	

U.S. PATENT 6,528,784 Claim Element	Claims at Issue	THERMO		AB/SCIEX ²	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
mass analyzer	1, 4	Any device usable either to deliver ions to another structure selectively, or to detect ions selectively, based on ion mass-to-charge ratios.	'784 patent: 1:57-58, 2:2, 3:45-49, 3:63-67, 4:25-28, 4:31-33, 6:65 to 7:2, 7:4-10, fig. 1, fig. 8.	A device that sorts ions according to their mass to charge ratio and detects them.	'784 patent, col. 3, ll. 4-7; col. 7, ll. 5-10; Fig. 1, refs. Q1, Q2, Q3, and 12, and discussion thereof; Fig. 8, ref. 41 and discussion thereof.
adduct ion(s)	1, 4	An ion formed by combining two or more different kinds of particles, usually an ion and a molecule.	'784 patent: 2:38-42. Prosecution history: Amendment/Response, 6/11/2002, p. 3.	Ions formed by a non-covalent association between sample ions and solvent molecules.	'784 patent, col. 2, ll. 39-55.
multipole ion guide	1, 4	A device that confines ions radially and guides them along an extended longitudinal path, as determined by multipolar electric and/or magnetic fields.	'784 patent: 3:10-15, 3:63-67, 4:25-28, 4:64 to 5:5, fig. 1, fig. 8.	A rod set to which an AC voltage is applied that confines ions radially along a longitudinal path.	'784 patent, col. 5, ll. 3-5; col. 1, l. 45 – col. 2, l. 32 and references cited therein discussing ion guides; Figs. 1 and 8, refs. 27 and 28 and discussion thereof.
mass analyzer chamber	1	Agreed.		The high vacuum chamber that houses the mass analyzer.	
means associated with one or both of said first and	1	1a. This is a means-plus-function limitation subject		1a. Agreed.	

² AB/Sciex reserves the right to supplement this claim chart in response to events occurring in the Re-examination and Reissue proceedings in the U.S. Patent and Trademark Office concerning the '784 patent.

U.S. PATENT 6,528,784 Claim Element	Claims at Issue	THERMO		AB/SCIEX ²	
		CONSTRUCTION	INTRINSIC EVIDENCE	CONSTRUCTION	INTRINSIC EVIDENCE
second multipole ion guides for increasing the translational kinetic energy of the adduct ions so that at the vacuum pressure of the second interface chamber adduct ions traveling into the chamber are converted into sample ions without fragmentation of sample ions	to 35 U.S.C. § 112, ¶ 6. 1b. The function is increasing the translational kinetic energy of the adduct ions so that at the vacuum pressure of the second interface chamber adduct ions traveling into the chamber are converted into sample ions without fragmentation of sample ions. 1c. The corresponding structures described in the specification include a skimmer that precedes the first ion guide, a lens located between the first and second ion guides, and their associated voltage sources.	1. '784 patent: 3:10-22, 3:26-38, 3:50-56, 5:5-10, 5:20-31, 6:8-10, 6:19-45, 6:49-57, 8:17-20, fig. 1, fig. 8.	1b. The function is increasing the translational kinetic energy of the adduct ions so that at the vacuum pressure of the second interface chamber, which is less than 1 mTorr, adduct ions traveling into the chamber are converted into sample ions without fragmentation of sample ions.	<i>which is less than 1 mTorr:</i> '784 patent, col. 4, ll. 49-53; col. 6, ll. 46-58; Table 2 and discussion thereof.	
		2. '784 patent: 3:26-38, 3:50-56, 5:5-10, 5:20-27, 6:8-10, 6:19-45, 6:49-57.	1c. The corresponding structure, material, or acts described in the specification is a DC offset voltage between the first multipole ion guide and the immediately preceding lens (ion guide 27 and skimmer 24), or a DC offset voltage between the second ion multipole ion guide and its immediately preceding lens (ion guide 28 and lens 18), or both. 2. No construction required separate from that set forth in 1c above.	'784 patent, col. 3, ll. 32-38; col. 5, ll. 6-10; col. 5, ll. 20-30; col. 6, ll. 50-57; Figs. 1 and 8, refs. 24, 27, 18, 28 and discussion thereof.	

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1. whereby to increase the sample ion current and therefore the sensitivity of the mass spectrometer system [claim 1]	1, 4	“means ... for increasing” has a relation to either or both of the first and second multipole ion guides.			
		1. The sensitivity of the mass spectrometer system is increased because the flow of sample ions is increased relative to the flow of sample ions in the absence of dissociation of adduct ions at the pressure of the second chamber.	<p>’784 patent: abstract, 2:38-51, 2:56-58, 3:41-45, 4:1-25, 5:14-20, 5:56 to 6:19, figs. 2-7.</p> <p>Prosecution history: Amendment/Response, 6/11/2002, pp. 3-4. Notice of Allowability, 9/4/2002, pp. 2-3.</p> <p>’784 patent: abstract, 2:38-51, 2:56-58, 3:41-45, 4:1-25, 5:14-20, 5:56 to 6:19, figs. 2-7.</p> <p>Prosecution history: Amendment/Response, 6/11/2002, pp. 3-4. Notice of Allowability, 9/4/2002, pp. 2-3.</p>	1. The sensitivity of the mass spectrometer system is increased due to an increase in sample ion current entering the mass analyzer that is caused by the conversion of adduct ions into sample ions in the second chamber without fragmentation of sample ions.	1. ’784 patent, col. 5, ll. 14-19; col. 2, l. 39 – col. 3, l. 38; Table 2 and discussion thereof; Figs. 2a and 2b – 7a and 7b and discussion thereof.
2. to increase the sample ion current and therefore the sensitivity of the mass spectrometer system [claim 4]		2. Same.		2. The sensitivity of the mass spectrometer system is increased due to an increase in sample ion current entering the mass analyzer that is caused by the dissociation of adduct ions in the second chamber without dissociating sample ions.	2. Same as above.
applying a DC offset voltage between a selected one or both lenses and	4	Supplying DC voltage such that there is a voltage difference between at least one of the lenses and the ion guide that comes after	<p>’784 patent: 3:26-38, 3:50-56, 5:5-10, 5:20-31, 5:56-65, 6:8-10, 6:19-45, 6:49-57.</p>	Applying a DC offset voltage to at least one of the lenses and the ion guide that comes immediately after it.	’784 patent, col. 5, ll. 6-10; col. 5, ll. 20-30; col. 6, ll. 50-57; Figs. 1 and 8, refs. 24, 27, 18, 28 and discussion thereof.

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the succeeding multipole ion guide		them.			
ion lens	4	A device to which one or more voltages are applied so that the device deflects ions and may be used to focus or otherwise to change the shape or direction of an ion beam without continuously confining the ions radially along an extended longitudinal path.	'784 patent: 1:28-31, 3:16-24, 3:63-67, 4:25-28, 4:39-40, fig. 1, fig. 8.	An electrostatic device for changing the path of an ion beam.	'784 patent, col. 3, ll. 17-26; Figs. 1 and 8, refs. 24 and 18 and discussion thereof.
a DC offset voltage ... having an amplitude so as to provide translational kinetic energy to said adduct ions to dissociate the adduct ions without dissociating the sample ions at the pressure of the second chamber	4	One or more DC offset voltages provides translational kinetic energy such that, at the vacuum pressure of the second chamber, adduct ions that have entered the second chamber are broken up to form additional sample ions without fragmentation of sample ions.	'784 patent: 3:26-43, 3:50-56, 5:5-10, 5:20-31, 8:17-20.	The DC offset voltage provides sufficient translational kinetic energy to the adduct ions entering the second chamber to dissociate them without dissociating sample ions at the pressure of the second chamber, which is less than 1 mTorr.	'784 patent, col. 3, ll. 32-38; col. 5, ll. 6-10; col. 5, ll. 20-30; col. 6, ll. 50-57; col. 6, ll. 59-61; Figs. 1 and 8, refs. 24, 27, 18, 28 and discussion thereof. <i>which is less than 1 mTorr:</i> '784 patent, col. 4, ll. 49-53; col. 6, ll. 46-58; Table 2 and discussion thereof.

Date: October 28, 2005